

The genera *Miraclathurella* Woodring, 1928 (Gastropoda: Pseudomelatomidae) and *Darrylia* García, 2008 (Gastropoda: ?Horaiclavidae), with two proposed new combinations for *Darrylia*

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ABSTRACT

The genera *Miraclathurella* Woodring, 1928 and *Darrylia* García, 2008 are compared. *Miraclathurella clendenini* and *M. peggywilliamsae* are reassigned to *Darrylia*.

INTRODUCTION

Miraclathurella Woodring, 1928 and *Darrylia* García, 2008 are two genera that are similar in conchological characters. However, Bouchet et al. (2011) have placed *Miraclathurella* in the family Pseudomelatomidae and tentatively placed *Darrylia* in the recently erected family Horaiclavidae. According to Bouchet et al. (2011: 293), the family Horaiclavidae “shares many characters with Pseudomelatomidae, conchologically differing by a small stout shell with short siphonal canal and usually poorly developed spiral sculpture”. Puillandre et al. (2001) further define Horaiclavidae, stating that it “mostly includes genera previously placed in the Drilliidae and Pseudomelatomidae.” Molecular data clearly show that the included genera are distinct in these families and correspond to a highly supported clade, currently arranged as a sister clade to the Clavatulidae (Puillandre, 2011: 269). Unfortunately, molecular data has not been available for either *Miraclathurella* or *Darrylia*.

The genus *Miraclathurella* was proposed by Woodring (1928: 191) to accommodate turrid-like mollusks with, among other characters, a stout, broad-tipped nucleus “consisting between two and a half and three whorls, the end of the last whorl bearing a few coarse curved, protractive axial riblets.” The aperture is “very long and narrow”, and the anterior canal “relatively long.” Woodring named two species in *Miraclathurella*: *M. vittata* (Figure 1), with a protoconch of “about three whorls, about the last half whorl bearing an anterior keel, behind which lie axial riblets,” and *M. entemna* (Figure 2), with a protoconch “consisting of about two and a half whorls, the last quarter

whorl bearing an obscure anterior keel, behind which lie a few obscure axial riblets.” Although Woodring considered the Bowden beds to be of Miocene origin, studies of the foraminifers in the area have proved them to be younger, from the Pliocene Epoch (Donovan, 1998).

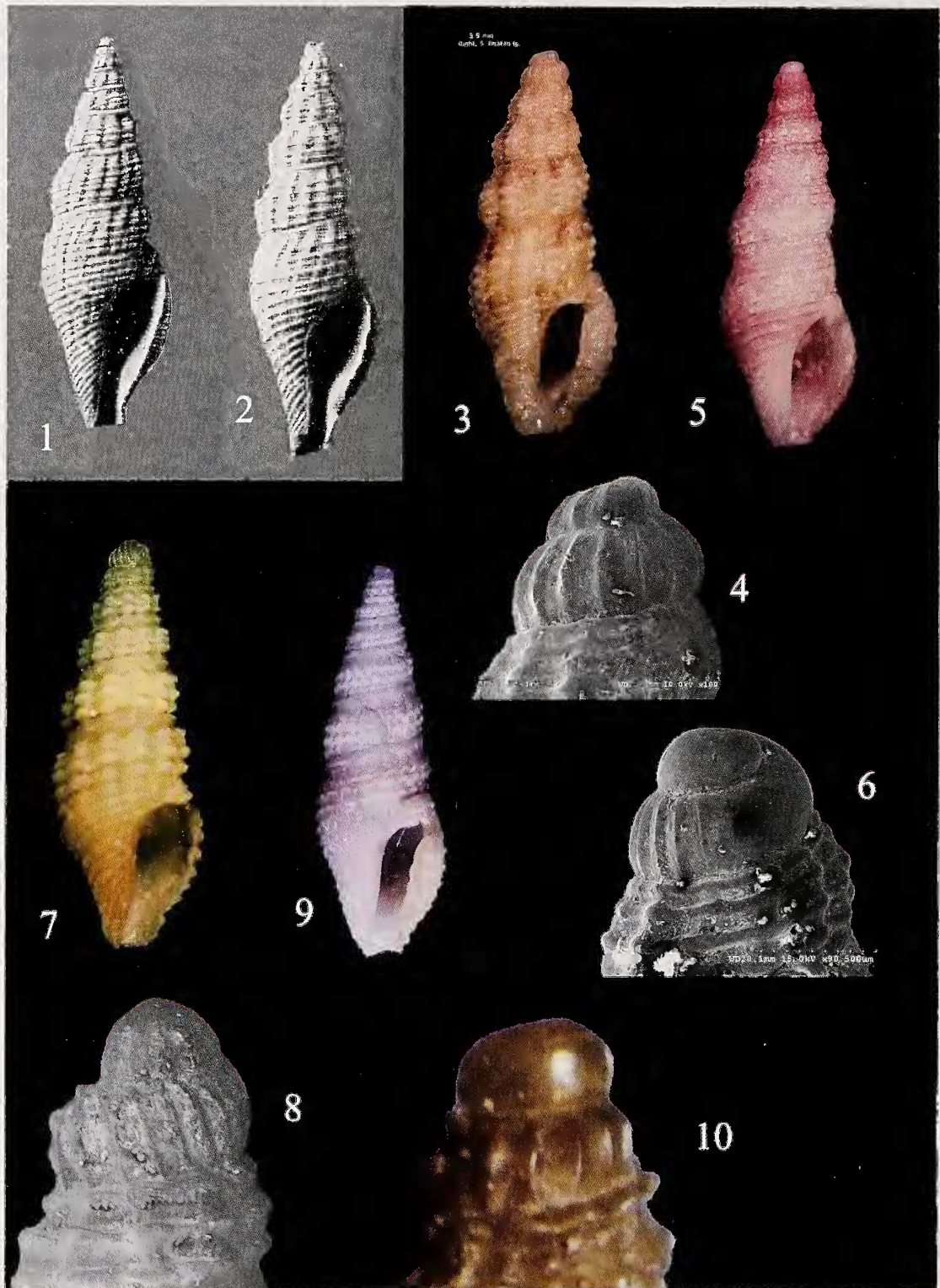
Use of the genus *Miraclathurella* remained restricted to fossil species from Bowden described by Woodring until 1971, when Shasky described *Miraclathurella mendozana* from the recent fauna of the Panamic Province. In his Discussion (Shasky, 1971: 68), that author compared this species to *Clathrodrillia woodringi* Pilsbry and Olsson, 1941, a species described as a Pliocene fossil from the Canoa Formation of Ecuador, which Shasky also assigned to *Miraclathurella*. Also in 1971, Keen transferred *Pleurotoma bicanalifera* Sowerby, 1934 to *Miraclathurella* (Keen, 1971: 728, fig. 1719).

The genus *Miraclathurella* did not appear in the literature of the recent fauna of the western Atlantic until 1988, when Jong and Coomans (1988) transferred *Drillia kleinrosa* Nowell-Usticke, 1969, from the shallow waters around Aruba, Bonaire and Curaçao, to *Miraclathurella*. And two decades later a second species, *M. clendenini* García, 2008, from Bahía de Campeche, was tentatively placed in that genus. A third species, *M. peggywilliamsae* Fallon, 2010, from St. Vincent and the Grenadines soon followed.

Although Jong and Coomans placed *kleinrosa* in *Miraclathurella*, the species did not seem to fit Woodring’s description of that genus, lacking any vestige of a keel on the protoconch and possessing a short, not long, siphonal canal so when a second species with the same differentiating characters was discovered in Roatán Island, Honduras, there seemed to be a need to create a taxon that would include those two species, and the genus *Darrylia* was proposed.

DISCUSSION

Darrylia differs from *Miraclathurella* in having more solid, more stout shells; a paucispiral nucleus of less than two whorls that are almost completely, or partially, axially ribbed; a short aperture which occupies no more than



Figures 1–10. Species of *Miraclathurella* and *Darrylia*. **1.** *Miraclathurella vittata* Woodring, 1928, Holotype, USNM 135376, length 12 mm, width 4 mm, Bowden Formation, Jamaica. **2.** *Miraclathurella entemna* Woodring, 1928, Holotype, USNM 135374, length 15.5 mm, width 4.7 mm, Bowden Formation, Jamaica. **3, 4.** *Darrylia harryleei* García, 2008, Holotype, ANSP 416409, length 5.9 mm, width 2.1 mm, Oakridge, Roatán I., Honduras, 0.2 m depth. **5, 6.** *Darrylia kleinrosa* (Nowell-Usticke, 1969), EFG 13924, length 6.5 mm, off Hotel Bonaire, Bonaire I., Netherlands Antilles, 2.5–3.0 m depth. **7, 8.** *Darrylia clendenini* (García, 2008), Holotype ANSP 416411, length 8.2 mm, width 3.2 mm, Bahía de Campeche, southwestern Gulf of Mexico, 20°51.49' N, 92°21.44' W, 63–65 m depth. **9, 10.** *Darrylia peggywilliamsae* (Fallon, 2010), Holotype USNM 1139716, length 10.3 mm, width 3.6 mm, Baliceaux Island, St. Vincent and the Grenadines, Caribbean Sea.

one third the length of the shell; and a truncated shell with a shorter anterior canal. When the genus *Darrylia* was proposed, only *D. harryleei* (Figures 3, 4) and *D. kleinrosa* (Figures 5, 6) were considered. Despite its obvious similarities with *Darrylia*, the species *clendenini* (Figures 7–8) was tentatively placed in *Miraclathurella* mainly because of the presence of (1) a subsutural cord and (2) a somewhat longer anterior canal. However, the discovery of "*Miraclathurella*" *peggywilliamsae* (Figures 9–10), which also has a subsutural cord, and which otherwise fits well in *Darrylia*, has led me to conclude that some members of the genus *Darrylia* do possess a subsutural cord. One may point out that the almost completely ribbed protoconch of *D. clendenini* (Figure 4) does compare well with that of *D. harryleei* (Figure 8), the type species of *Darrylia*; and that the first smooth, then ribbed protoconch of *D. peggywilliamsae* (Figure 10) reflects the characters of the protoconch of *D. kleinrosa* (Figure 6).

Comparing the plate images of *Miraclathurella* spp. (Figures 1–2) and *Darrylia* spp. (Figures 3, 5, 7, 9) they illustrate the differences between the two genera. *Darrylia clendenini* still seems to show a somewhat more elongated anterior canal, but the specimen figured, as well as all other specimens from the type material, were sub-adult, and the outer lip had not yet thickened, which gives it that seemingly uncharacteristic appearance.

Drawing from the considerations above, I propose that *Miraclathurella clendenini* García, 2008 and *M. peggywilliamsae* Fallon, 2010 be assigned to *Darrylia*.

Two recent species from the Panamic Province have been placed in *Miraclathurella*. However, Keen's new combination of *M. bicanalifera* is believed to be in error, as the species characters are more similar to those of *Glyphostoma*. *Glyphostoma epicasta* Bartsch, 1934 is its western Atlantic cognate. Compare Keen (1971:726, fig. 11) with Bartsch (1934, pl. 4, figures 4, 7, 9), and with the figure at <http://www.jaxshells.org/glypepicj.htm>.

The multispiral protoconchs in *Miraclathurella* species indicate planktotrophic larval development and resulting broader distributions for these species. This could explain the presence of a broadly distributed ancestor to both the new species and the recent eastern Pacific species *M. mendozana*. Although Shasky described the protoconch as "smooth" (Shasky, 1971: 68), without the axial riblets described by Woodring, the shell does have all the other characters of *Miraclathurella*.

In the western Atlantic, the genus *Miraclathurella* seems to be restricted to the Pliocene beds at Bowden, Jamaica. The genus *Darrylia*, characterized by a paucispiral protoconch, has so far produced four distinct populations: *Darrylia peggywilliamsae* in the St. Vincent

Grenadines area in the southeastern Caribbean, *D. kleinrosa* around the ABC islands, Netherlands Antilles, in the southwestern Caribbean, *D. harryleei* in the Bay Islands, Honduras, and *D. clendenini*, in the southwestern Gulf of Mexico.

ACKNOWLEDGMENTS

My thanks to Phillip Fallon for allowing me to reproduce the images of the holotype of *Miraclathurella peggywilliamsae*; he has also critically read the ms, providing information that improved the quality of the paper. The figures of *Miraclathurella vittata* and *M. entemna* are reproduced from Woodring (1928: pl. 8, figures 2 and 5).

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